TOP SECRET

Multi

PRIORITY

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T O P S E C R E T 082215Z CITE [redacted] 0893. 1967 JUN 8 22 41Z 25X1

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CORONA/PET

SUBJ:MISSION 1041 PHOTOGRAPHIC EVALUATION INTERIM REPORT (PET)

[redacted] 25X1

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1. NUMERICAL SUMMARY

MSN NO AND DATES: 1041-1, 9-16 MAY 1967
1041-2, 16-24 MAY 1967

LAUNCH DATE AND TIME: 9 MAY 1967/2151Z

VEHICLE NUMBER: 1624

CAMERA SYSTEM J-40

PAN CAMERA NO: FORWARD-LOOKING 208
AFT-LOOKING 209

MSN 1041-1 S/I NO: D105/124/133

MSN 1041-2 S/I NO: D102/127/127

RECOVERY REVS: MSN 1041-1, 93
MSN 1041-2, 215

2. CAMERA SETTINGS

FWD-LOOKING 0.225 INCH SLIT, WRATTEN 23A FILTER

AFT-LOOKING 0.175 INCH SLIT, WRATTEN 21 FILTER

3. PERFORMANCE SUMMARY

THE OVERALL IMAGE QUALITY OF MISSION 1041 IS GOOD AND IS CONSIDERED TO BE COMPARABLE TO THAT OF MISSION 1040. THE PHOTO INTERPRETATION SUITABILITY IS DEGRADED FOR THE TARGETS AT THE MOST NORTHERN LATITUDES BECAUSE OF SMALL SCALE RESULTING FROM THE HIGHLY ECCENTRIC ORBIT. SOME FURTHER DEGRADATION RESULTS FROM THE SMALL AREA OF OUT-OF-FOCUS IMAGERY OF THE SLAVE CAMERA (DESCRIBED

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GROUP 1
Excluded from automatic downgrading and declassification

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IN PARA. 4A).

HEAVY CLOUD COVER AND OTHER ATMOSPHERIC ATTENUATION IN SOME TARGET AREAS FURTHER LIMITED THE VALUE OF THIS MISSION FOR CURRENT INTELLIGENCE. HOWEVER, THE PHOTO-INTERPRETERS JUDGED THE VALUE OF THIS MISSION AS FAIR TO GOOD.

WHILE PHOTO-INTERPRETERS HAVE EXPRESSED A SLIGHT PREFERENCE FOR THE HIGHER CONTRAST IMAGERY PRODUCED BY THE FORWARD CAMERA, THE TEAM BELIEVES THE INFORMATION CONTENT OF THE AFT CAMERA IMAGERY IS EQUIVALENT, AND IN SOME CASES, BETTER.

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4. ANOMALIES

A. A "SOFT SPOT" (OUT-OF-FOCUS AREA) WAS OBSERVED ON SLAVE CAMERA MATERIAL THROUGHOUT BOTH PARTS. THE SOFT AREA IS AT THE SUPPLY END OF THE FORMAT ALONG THE FREQUENCY MARK EDGE. THE AFFECTED AREA WAS LESS THAN TWO PERCENT OF THE FORMAT AT THE START OF THE 1041-1 MISSION, AND GRADUALLY INCREASED TO ABOUT SIX PERCENT AT THE END OF THE 1041-2 MISSION.

CAUSE: THERE APPEARS TO HAVE BEEN A FILM TRACKING BIAS ACROSS THE PLATEN THAT INCREASED GRADUALLY THROUGH THE MISSION. THIS BIAS MAY HAVE CAUSED THE FILM TO TOUGH THE GUIDE RAILS PRODUCING A SMALL BUCKLE.

ACTION: THIS ANOMALY IS SIMILAR TO PAST SOFT SPOT HISTORY. SPECIAL CARE TO INSURE PROPER FILM TRACKING ALIGNMENT WILL CONTINUE TO BE TAKEN. (MONITOR: [redacted]

25X1

B. THE 200 CYCLE TIMING MARKS WERE MISSING FOR THE FIRST ONE TO SIX INCHES OF THE FIRST FRAME OF MOST PASSES ON BOTH MAIN CAMERAS.

CAUSE: SIMILAR ANOMALIES HAVE BEEN NOTED IN SEVERAL PREVIOUS MISSIONS (SEE PEIR ACTION ITEMS 036/1028, 074/1033, AND 119/1039). A CIRCUIT MODIFICATION TO IMPROVE THE CONDITION IS SCHEDULED FOR INTRODUCTION ON SYSTEM J-49 AND J-50.

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ACTION: AS LONG AS THE ANOMALY IS CONFINED TO THE START-UP FRAME, IT HAS NO OPERATIONAL SIGNIFICANCE AND NO FURTHER ACTION IS WARRANTED.

C. AN OPEN SHUTTER FAILURE OF THE STARBOARD H. O. OF THE MASTER CAMERA OCCURRED FOR ONE CYCLE (TWO PAN FRAMES) OF PASS D69.

CAUSE: UNKNOWN.

ACTION: IMAGERY FROM THIS H. O. BEFORE AND AFTER THE ANOMALY INDICATES COMPLETELY NORMAL SHUTTER OPERATION. NO FURTHER ACTION IS INDICATED.

D. MINUS DENSITY STREAKS ON THE SLAVE CAMERA APPEARED THROUGHOUT THE MISSION.

CAUSE: PARTICLES IN THE AREA OF THE FIELD FLATTENER PRODUCED THESE STREAKS. THE STREAKS IN THIS CASE ARE PRIMARILY A BEAUTY DEFECT WITH NO APPARENT LOSS OF IMAGE QUALITY.

ACTION: NONE INDICATED.

E. THE LAST 17 FRAMES OF 1041-1 INDEX PHOTOGRAPHY EXHIBITED A SMALL FOREIGN PARTICLE.

CAUSE. DURING A NORMAL METERING CYCLE THE FILM CARRIED A SMALL FOREIGN PARTICLE (ONE SQUARE MM) INTO THE ACTIVE FORMAT AREA AND DEPOSITED IT ON THE TOP SURFACE OR THE RESEAU PLATE, WHERE IT REMAINED THROUGH THE LAST FRAMES OF INDEX PHOTOGRAPHY.

ACTION: NONE REQUIRED.

F. HIGH FOG ON STELLAR AND INDEX RECORDS.

CAUSE: THE BASE PLUS FOG DENSITIES OF BOTH THE INDEX AND STELLAR RECORDS WERE HIGHER THAN NORMAL WITH THE 1041-2 FOG DENSITIES SIGNIFICANTLY HIGHER THAN THOSE FROM 1041-1. THESE DATA STRONGLY SUGGEST AN EXPOSURE FROM RADIATION RESULTING FROM THE UNUSUALLY HIGH APOGEE OF THE ORBIT.

ACTION: VERIFY THAT THE VEHICLE WAS SUBJECTED TO RADIATION BY EVALUATING THE RADIATION MONITORING FLIGHT PACKETS.

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5. COMMENTS

A. AN ANALYSIS OF THE INDEX IMAGERY FOR MISSION 1041-1 AND 1041-2 YIELDED THE FOLLOWING INFORMATION:

1041-1

TOTAL INDEX FRAMES	443
CLEAR AND TERRAIN	73 OR 16 PERCENT
CLEAR AND SNOW	23 OR 5 PERCENT

1041-2

TOTAL INDEX FRAMES	460
CLEAR AND TERRAIN	90 OR 20 PERCENT
CLEAR AND SNOW	21 OR 4 PERCENT

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6. CHARACTERISTIC ANOMALIES

THERE ARE CERTAIN CHARACTERISTIC ANOMALIES WHICH ARE CONSIDERED INHERENT TO THE OPERATION OF THE CORONA SYSTEM. WHILE THESE ITEMS WARRANT ATTENTION TO PREVENT FURTHER DEGRADATION, IT IS NOT FELT THAT SPECIFIC ACTION ITEMS SHOULD BE ASSIGNED. A SUMMARY OF THESE ITEMS AND THE DEGREE OF DEGRADATION IS PRESENTED BELOW.

A. RAIL SCRATCHES ARE CONTINUOUS ALONG BOTH FILM EDGES THROUGHOUT THE MISSION. THEIR EXTENT IS CONSIDERED AVERAGE.

B. THE PRESENCE OF DENDRITIC STATIC WAS LESS THAN AVERAGE.

C. SCRATCHES WITHIN THE FORMATS OF BOTH PAN CAMERAS OCCURRED TO AN AVERAGE EXTENT.

D. LIGHT LEAK FOG PATTERNS WERE DUE TO LIGHT LEAKAGE AT BOTH PAN CAMERA DRUMS. THE EXTENT WAS ABOUT AVERAGE.

E. FORMAT EDGE IRREGULARITY DUE TO SCRAPED EMULSION WAS MUCH LESS THAN AVERAGE.

F. BLANK OR DOUBLE-EXPOSED STELLAR AND INDEX FORMATS CAUSED BY MASTER TO SLAVE CAMERA COMMAND SHIFT OCCURRED IN ONLY ONE INSTANCE.

UNLESS THE COMMUNITY OBJECTS, THE PET TEAM INTENDS TO ELIMINATE THE SECTION ENTITLED "CHARACTERISTIC ANOMALIES" FROM FUTURE PET REPORTS AND DISCUSS THE ITEMS INCLUDED THEREIN ONLY WHEN THEY ARE ABNORMAL.

T O P S E C R E T

-END OF MESSAGE-